Valley Water

2020

Water Shortage Contingency Plan

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Santa Clara Valley Water District

2020 Water Shortage Contingency Plan

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Valley Water

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WATER SHORTAGE CONTINGENCY PLAN

OVERVIEW

Valley Water's Water Shortage Contingency Plan (WSCP) defines specific triggers, based on groundwater storage levels, when Valley Water will call on the public to reduce water demand, and what actions it will take in these circumstances. Water use reductions may be needed in response to drought conditions or an emergency that affects water supply. The WSCP also summarizes planning for natural disaster, drought-related revenue impacts, and Valley Water's legal authority to respond to water shortages. Where applicable, Valley Water's actions during the recent five-year drought are summarized for reference.

The WSCP was developed consistent with Valley Water's water shortage management objectives:

- To minimize the economic, social, and environmental hardship to the community caused by water shortages.

- To establish water use reduction targets and work closely with retailers and cities in developing efficient and effective demand reduction measures during water shortages that concentrate on eliminating non-essential uses first.

- To maintain and safeguard essential water supplies for public health and safety needs, including during acute catastrophic events.

1. WATER SUPPLY RELIABILITY ANALYSIS

Valley Water's basic water supply strategy to compensate for supply variability is to store excess wet year supplies in the groundwater subbasins, local reservoirs, San Luis Reservoir, and Semitropic Groundwater Bank, then to draw on these stored supplies during dry years to help meet demands. Based on projected demands, and Valley Water's existing and planned sources of supply, Valley Water will be able to meet countywide demands through 2045 under normal, a single dry, and five consecutive dry year conditions.

The Drought Risk Analysis (DRA) indicates that if a five-year drought were to occur under existing conditions, Valley Water will need to employ a range of response actions, including using supplies stored in the local groundwater, local reservoirs, and Semitropic groundwater bank, as well as augmenting supplies with supplemental sources such as water transfers and exchanges, to meet potential shortage. See Chapter 7 of Valley Water's Urban Water Management Plan (UWMP) for details of supplies and demands in various years types.

2. ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT PROCEDURES

Valley Water projects available water supplies on an annual basis. Water supply operations planning considers all of Valley Water's water supply system and sources, including imported water (deliveries, banking, sales, transfers, exchanges, carry-over), local surface water reservoirs, local water supply diversions, groundwater recharge systems, groundwater subbasins, and water treatment plants. A summary of available water resources is provided in Table 1. Because Valley Water's supply comes from a variety of sources, many factors and events affect water supply availability in any given year. Through its long- term practice, Valley Water has determined that projected end-of-year groundwater storage serves as the best indicator of potential water shortages and early warning signal, and therefore uses it to determine a potential water supply shortage.

Table 1. Water Supply Sources

Source	Description
Central Valley Project (CVP)	Contract for 152,500 acre-feet per year (AFY). Actual allocations are based on availability of water supplies after meeting regulations to protect the environment, water quality, and other factors.
State Water Project (SWP)	Contract for 100,000 AFY. Actual allocations are based on availability of water supplies after meeting regulations to protect the environment, water quality, and other factors.
Natural Groundwater Recharge	Approximately 61,000 AF of precipitation and other natural flows are directly recharged to the groundwater basins in an average year. This amount varies with hydrologic conditions. Natural recharge differs from Valley Water's managed recharge program where precipitation is captured in reservoirs and purposely released for recharge in ponds and along managed creeks.
Local Surface Water	Valley Water has water rights to capture and use 223,000 AFY at the reservoirs and diversion structures. Currently, 53,000 AFY are used for water supply on average. This is expected to increase to an average of 83,000 AFY by 2040. The total volume used depends on rainfall and demands.
Recycled Water	Recycled water is produced by the County's four wastewater treatment plants for various non-drinking water (non-potable) purposes. In addition, Valley Water provides advanced treated purified water to South Bay Water Recycling to improve the quality of the non-potable supply. Recycled water use is projected to increase from approximately 17,000 AFY in 2025 to approximately 28,000 AFY by 2045.
San Francisco Public Utilities Commission (SFPUC)	SFPUC's Regional Water System provides water to some cities in the northern part of the County. On average about 55,000 AF is delivered to the County each year.
Semitropic Groundwater Bank	Valley Water has invested in 350,000 AF of out-of-county water storage capacity. Water is delivered to the groundwater bank when surplus supplies are available and withdrawn when supplies are limited. Valley Water's contract allows the withdraw between approximately 31,000 to 78,000 AF of banked water per year, depending on SWP allocation (larger withdrawals are permitted during larger allocation years).
Local Reservoirs	Valley Water operates 10 reservoirs in the County with a total capacity of approximately 166,000 AF that capture runoff from the watershed for release through the year to recharge the groundwater basins. Water captured at Anderson, Coyote, Almaden, and Calero Reservoirs can also be sent to the water treatment plants. Anderson Dam is currently undergoing a seismic retrofit and is not able to provide water storage. Valley Water expects the retrofit project to be completed in 2030.
Groundwater Storage	As the County's Groundwater Sustainability Agency, Valley Water manages the Santa Clara and Llagas subbasins and strives to maintain adequate storage in wet and average years to ensure water supply reliability during dry periods or shortages. The estimated operational storage capacity of the groundwater subbasins is up to 548,000 AF.

WATER SHORTAGE CONTINGENCY PLAN

Annual water supply operations planning begins each September for the upcoming year and considers water year scenarios that span from wet to very dry. This annual water supply planning considers current groundwater storage, treated water contracts, local water rights and storage, environmental restrictions, source water quality, planned facility maintenance, imported water carryover, imported water contract terms, stored water in carryover and the Semitropic Bank, and potential water transfers. Operations planning serves as the basis for daily operational decisions consistent with the annual strategy to manage water supplies and reserves. The process for annual water supply operations planning is depicted in Figure 1.

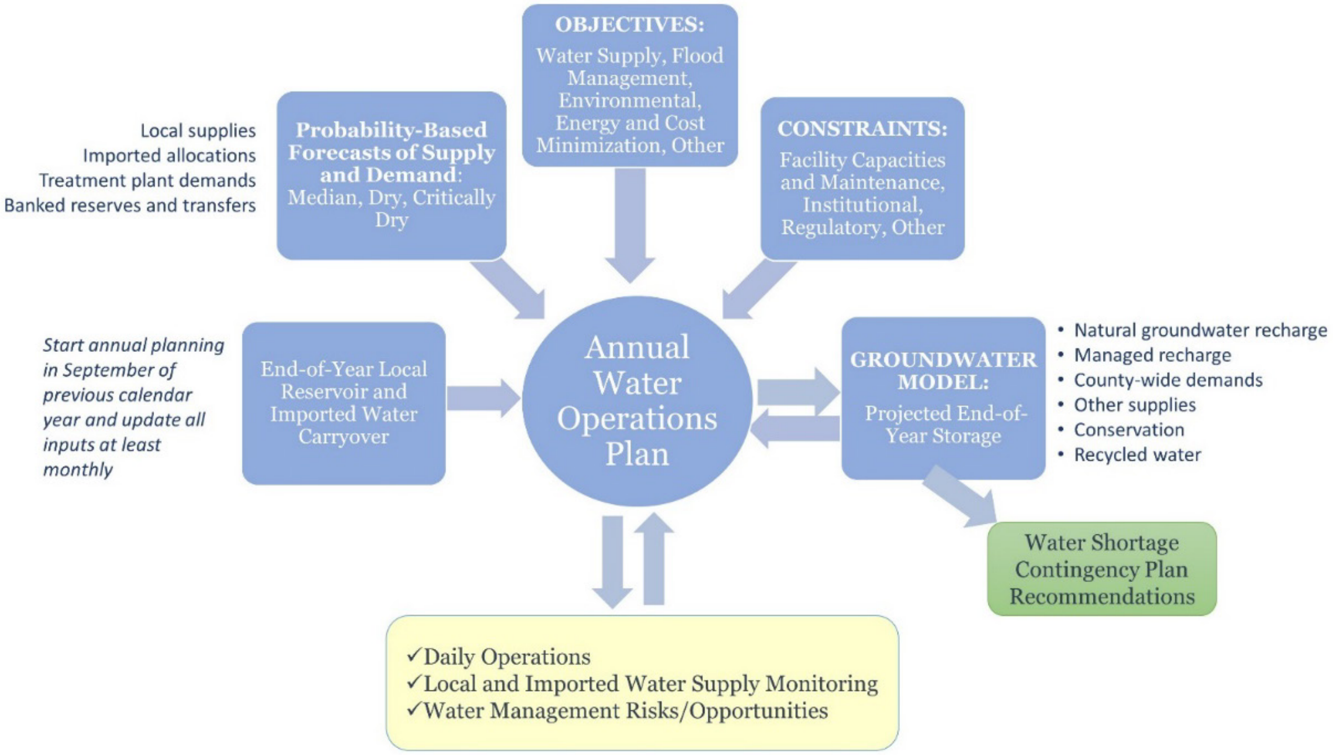
OBJECTIVES:
Water Supply, Flood Management, Environmental, Energy and Cost Minimization, Other
Local supplies
Imported allocations
Treatment plant demands
Banked reserves and transfers
Probability-Based Forecasts of Supply and Demand: Median, Dry, Critically Dry
CONSTRAINTS:
Facility Capacities and Maintenance, Institutional, Regulatory, Other
Start annual planning in September of previous calendar year and update all inputs at least monthly
End-of-Year Local Reservoir and Imported Water Carryover
Annual Water Operations Plan
GROUNDWATER MODEL:
Projected End-of-Year Storage
Natural groundwater recharge
Managed recharge
County-wide demands
Other supplies
Conservation
Recycled water
Water Shortage Contingency Plan Recommendations
✓Daily Operations
✓Local and Imported Water Supply Monitoring
✓Water Management Risks/Opportunities

Figure 1. Annual Water Operations Planning

Water supply operations planning is dynamic, and rain fall data, imported water allocations, water supply projections, availability of supplemental supplies, and facility capacities are updated at least monthly to reflect current conditions. The projection of water supplies through the end of the year is based on assumed dry conditions (90% exceedance), median conditions (50% exceedance), and in some cases, critically dry conditions (99% exceedance). As assumptions and projections are updated through the year, Valley Water continues to update its end-of-year groundwater storage projections.

The state of the groundwater basins is reported monthly through a Groundwater Conditions Report (https://www.valleywater.org/your-water/where-your-water-comes-from/groundwater/groundwater-monitoring) and Water Tracker (https://www.valleywater.org/your-water/water-supply-planning/monthly-water-tracker). The Groundwater Conditions Report and Water Tracker contain a description and quantification of available water supplies including local reservoirs, imported water, treated water, recycled water, conserved water, and groundwater data, such as recent managed recharge, pumping, and storage trends. The annual water supply operations planning process together with the monthly reports are how Valley Water tracks and reports its annual water supply, demands, and overall water supply reliability. Projected end-of-year groundwater supply is the indicator for determining a potential water supply shortage and is based on current hydrology and demands, infrastructure capabilities and constraints, and assumed dry and median hydrology scenarios through the rest of the year.

Staff provides the Valley Water Board of Directors (Board) updates on available water supplies, groundwater storage projections, and water demand projections as needed throughout the year and at least once a year, typically in April. Starting in 2022, this update will take the form of an Annual Water Supply and Demand Assessment (Annual Assessment). The Annual Assessment will provide an update on projected demands through the current year, a description and quantification of available water supplies considering dry hydrological and regulatory conditions through the remainder of the current year, and existing infrastructure capabilities and plausible constraints. The Assessment will also include a forecast of water supplies conditions assuming the following year is dry. The forecast for the following year is provided as an informational piece and to provide context of Valley Water's water supply reliability.

The Annual Assessment will include a recommendation if WSCP actions are needed. The recommendation on WSCP actions will be based on the end-of-current-year groundwater storage projection and the water storage stages presented in Section 3. The Annual Assessment will be brought to the Board for their information as part of the regular water supply update. If WSCP actions are recommended based on the WSCP, the Board will be asked to decide on taking water shortage actions. The Annual Assessment will be provided to the state annually by July 1. The steps and timeline of the WSCP Annual Assessment Procedure are summarized in Table 2.

Table 2. WCSC Annual Assessment Procedure

Action	Description	Lead	Timeline
Start water supply operations planning	The water supply operations planning process sets targets for use of available water supplies for the coming year.	Raw Water Operations Unit	September
Initial end-of-Year Groundwater Storage Projection	Modeling / calculation of initial projected groundwater storage for coming year.	Groundwater Management Unit	September
Updates to water supply operations planning	Water supply operations planning projections are updated at least monthly to reflect actual conditions, operations, and updated groundwater storage projections. Projections are made for both dry and median hydrology for the remainder of the year.	Raw Water Operations Unit Groundwater Management Unit	Monthly
Preparation of WSCP Annual Assessment	Based on updates to water supply operations planning and groundwater storage projections, the WSCP Annual Assessment is prepared to document available water supplies, projected demands, and projected end-of-current-year groundwater storage. Recommendations for WSCP actions are based on assumed dry conditions the remainder of the year.	Water Supply Planning and Conservation Unit	March

Action	Description	Lead	Timeline
	The Annual Assessment will also provide a forecast of water supply reliability should the following year be dry.		
Board review of WSCP Annual Assessment / Determination of WSCP shortage actions	The Assessment is presented to the Board for their information and discussion. If shortage actions are recommended by the WSCP, the Board will be asked to take water shortage actions.	Board of Directors	April (Calls for WSCP shortage actions can be brought to the Board at any time during extended droughts and emergencies.)
Finalization of WSCP Annual Assessment	The Annual Assessment is finalized based on feedback provided by the Board.	Water Supply Planning and Conservation Unit Chief Operating Officer	May
Submittal of WSCP Annual Assessment	The Annual Assessment is submitted to DWR.	Water Supply Planning and Conservation Unit	June

3. SIX STANDARD WATER SHORTAGE STAGES

Valley Water uses five stages to categorize its water supply shortage. The stages are based on projected countywide end-of-year groundwater storage and include a normal stage and four progressive levels of water shortage (Table 3), as described below.

Table 3. Valley Water's Shortage Stages and Recommended Water Use Reductions

Stage	Stage Title	Projected End-of-Year Groundwater Storage	Recommended Short-Term Water Use Reduction
Stage 1	Normal	Above 300,000 AF	None
Stage 2	Alert	250,000 – 300,000 AF	0 – 10%
Stage 3	Severe	200,000 – 250,000 AF	10 – 20%
Stage 4	Critical	150,000 – 200,000 AF	20 – 40%
Stage 5	Emergency	Below 150,000 AF	>40%

- Stage 1 is normal water supply availability when groundwater storage is substantially full and no water shortage actions are necessary.

- Stage 2 is the alert stage that is meant to warn the public that current water use is tapping groundwater reserves. This stage is triggered when groundwater storage is projected to drop below 300,000 AF and the Board may request the public and retailers reduce water use by up to 10%.

- Stage 3 is the severe stage. Shortage conditions are worsening, requiring close coordination with retailers and cities to enact ordinances and water use restrictions. This stage is triggered when groundwater storage falls below 250,000 AF. The Board may pass a resolution that requests the public and retailers to reduce water use by 20%.

- Stage 4 represents critical conditions. This is typically the most severe stage in a multi-year drought. This stage is triggered when groundwater storage is projected to fall below 200,000 AF. The Board may increase the demand reduction request up to 40%.

- Stage 5 is for emergency situations. It is meant to address an immediate crisis such as a major infrastructure failure when water supply may only be available to meet health and safety needs. Stage 5 can also be triggered in a deep drought when groundwater levels are projected to fall below 150,000 AF. Water reduction may need to exceed 40%.

Table 4 shows a crosswalk between Valley Water's five (5) stages and the standard six (6) stages as defined by the DWR.

Table 4. Crosswalk Between Valley Water's Stages and Standard Stages

Stage	Title	Projected Countywide End of Year Groundwater Storage (AF)	Suggested short-term reduction in water use		Stage	Standard water shortage levels
1	**Normal**	>300,000	None			
2	**Alert**	300,000 - 250,000	0-10%	→	1	Up to 10%
3	**Severe**	250,000 - 200,000	10-20%	→	2	10 to 20%
4	**Critical**	200,000 - 150,000	20-40%	→	3 4	20 to 30% 30 to 40%
5	**Emergency**	<150,000	Over 40%	→	5 6	40 to 50% > 50%

4. SHORTAGE RESPONSE ACTIONS

Water supply shortages can occur for a variety of reasons including droughts; loss in ability to capture, divert, store, or utilize local supplies; and/or facility outages. As a wholesale agency, Valley Water does not have direct authority over retail rates and generally does not employ staff to enforce water restrictions. Therefore, Valley Water's water shortage response actions are focused mainly on public education and coordination with municipalities and retailers in the County. During droughts or shortages, Valley Water considers all available tools, including balancing demands for treatment plants and recharge facilities, incentives or requests for retailers to use either groundwater or treated water, and community outreach to maximize the use of available supplies. The collective response actions between Valley Water, residents, businesses, large landscapers, agriculture, municipalities, and retailers preceding and during a water supply shortage are described below (Table 5).

Table 5. Water Shortage Response Actions

Stage	Requested Short-Term Water Use Reduction	Actions
Stage 1 **Normal**	None	Valley Water continues ongoing outreach strategies aimed toward achieving long-term water conservation targets. Messages in this stage focus on services and rebate programs Valley Water provides to facilitate water use efficiency for residents, agriculture, and business. While other stages are more urgent, successful outcomes in Stage 1 are vital to long-term water supply reliability.
Stage 2 **Alert**	0 – 10%	This stage is meant to warn water users that current water use is tapping groundwater reserves. Work begins to coordinate ordinances with the County, cities, and retailers to prepare for Stage 3. Additional communication tools are employed to augment Stage 1 efforts, promote immediate behavioral changes, and set the tone for the onset of shortages. Specific implementation plans are developed in preparation of a drought deepening such as identifying supplemental funding to augment budgeted efforts and initiation of discussions with local, state, and federal agencies to call on previously negotiated options, transfers, and exchanges.
Stage 3 **Severe**	10 – 20%	Shortage conditions are worsening, requiring close coordination with the County, cities, retailers, large landscapers and agricultural users to implement ordinances and water use restrictions. Significant behavioral change is requested of water users. The intensity of communication efforts increases with the severity of the shortage. Messages are modified to reflect more dire circumstances. Water supplies are augmented through the implementation of options, transfers, exchanges, and withdrawals from groundwater banks.
Stage 4 **Critical**	20 – 40%	This is generally the most severe stage in a multi-year drought. Stage 3 activities are expanded, and Valley Water will encourage the County, cities, and retailers to increase enforcement of their water shortage contingency plans, which could include fines for repeated violations; and all water users to significantly reduce water use.
Stage 5 **Emergency**	40 – 50%	Stage 5 is meant to address an immediate crisis such as a major infrastructure failure but may also be needed in exceptional multi-year drought. Water supply may only be available to meet health and safety needs. Valley Water will encourage all water users to significantly reduce water use, activates its Emergency Operations Center, coordinates closely with municipalities and retailers, and provides daily updates on conditions.

4.1 Water Conservation

When the Board calls for short-term water use reductions, cities and water retailers consider implementing their WSCP actions to achieve the necessary water use reductions. Actions to achieve the desired shortage response may be different for each city/water retailer depending on their service area composition (commercial, industrial, residential) and source of water supplies. However, effort is made to make actions common to as many cities/water retailers as possible to provide for more consistent implementation and messaging.

WATER SHORTAGE CONTINGENCY PLAN

Reducing water consumption during a water shortage is generally achieved through increased education leading to behavioral changes (e.g., shutting off the water while brushing one's teeth) and water use restrictions (e.g., yard irrigation limited to specific days of the week). These water savings are considered short-term water use reductions and are distinct from long-term and on-going conservation programs described in Chapter 9 of Valley Water's UWMP.

The response to the 2012 to 2016 drought illustrates how Valley Water, cities, the County, and retailers coordinate to reduce water use during water shortages. On February 25, 2014, the Board approved a resolution setting a countywide water use reduction target equal to 20% of 2013 water use through December 31, 2014, and recommended that retail water agencies, cities, and the County implement mandatory measures as needed to achieve the 20% water use reduction target. The water use reduction achieved for calendar year 2014 was 13% compared to 2013 water use.

On March 24, 2015, as the drought continued, the Board called for 30% water use reductions and recommended that retail water agencies, cities and the County implement mandatory measures as needed to accomplish that target, including a two day per week outdoor irrigation schedule. To assist the retailers, cities, and the County achieve the water use reduction targets, Valley Water:

- Increased rebates for water-efficient landscape conversions, irrigation hardware upgrades, graywater laundry to landscape systems, and certain commercial fixtures.
- Created a Water Waste Reporting and Inspection Program.
- Increased staffing to support a water conservation call center.
- Developed several multimedia water conservation outreach campaigns, including “Brown is the New Green” and “Fight the Drought, Inside and Out”.
- Hosted dozens of panels, forums, and presentations.
- Encouraged participation in conservation programs through direct mail letters.
- Reduced the amount of treated water that it supplied to retailers.

Valley Water and retailers coordinated very closely during the drought, with regular meetings and information exchange on water supply conditions, operations, and actions/messaging to achieve water use reduction. All retailers took actions to implement water use reduction requirements and many adopted a coordinated maximum two day per week watering schedule. Together these actions achieved a 28% demand reduction in 2015 over 2013 levels. In 2015, Valley Water held two summits, one with retailers and another with elected officials, to facilitate increased water use reductions and increase coordination to meet the 30% reduction target. A common theme of the summits was that messaging and policy development should be consistent and coordinated throughout the County to reduce confusion among residents, increase ease of implementation, and make compliance and enforcement easier.

The WSCP was developed in accordance with 2020 Urban Water Management Plan guidebook. It provides general guidance on recommended actions to address water supply shortages. Valley Water continuously seeks to improve its water shortage planning efforts, which may be reflected in future refinements to this WSCP. Under extraordinary circumstances and/or rapidly changing water supply conditions, Valley Water may need to undertake water conservation measures that are stricter than those set forth in this WSCP.

4.2 Water Supply Augmentation

Valley Water works to maintain high groundwater storage in normal and wet years through a comprehensive managed recharge program and by providing treated water in lieu of groundwater pumping. Excess supplies are stored in the Semitropic Groundwater Bank, and Valley Water can carryover imported supplies in some years in San Luis Reservoir. During a dry year, Valley Water can use these stored supplies without having to call on the public to reduce demands. During an extended drought, Valley Water would need to pursue additional water shortage actions. Valley Water uses a combination of options to bring in additional water supplies to support local demands, including:

- Recovery and import of Valley Water's supplies stored in groundwater banking and exchange programs.
- Use of existing multi-year agreements between Valley Water and other water agencies that provide options to call on pre-negotiated transfer/exchange water.
- Collaboration with water agencies that have available resources to develop and implement agreements for the transfer/exchange of water to Valley Water.
- Participation in pooled water transfer programs with other SWP and CVP contractors.

The quantities of water available through these options are variable and depend on hydrology, pumping capacity, environmental restrictions, and demands from other agencies. These supplemental supplies help Valley Water mitigate the impact of a drought. For example, in 2015 Valley Water secured approximately 69,000 acre-feet in supplemental supplies through transfers, exchanges, public health and safety allocations, and Semitropic banking withdrawals, which helped mitigate the impact of the severely low imported water allocation that year.

4.3 Catastrophic Interruption Planning

This section describes planning that Valley Water has undertaken to prepare for catastrophic interruption of water supplies during a disaster.

Infrastructure Reliability Plan

Valley Water completed its first Infrastructure Reliability Plan (IRP) in 2005 and updated it in 2016. The IRP analyzes several outage scenarios for Valley Water's system, including an earthquake, extreme storm, Delta outage, and power outage. Valley Water and retailers agreed on a reliability target during an emergency that Valley Water should be able to restore treated water deliveries to meet the equivalent of a winter month's demand (i.e., February) within 30 days after a major disaster event. Modeling and analyses estimated service restoration time of Valley Water's existing system for minimum winter demands in each of the outage scenarios.

The worst-case outage scenario was a magnitude 7.9 earthquake on the San Andreas fault, which would result in an estimated 30-day outage time before Valley Water can provide minimum treated water demands to retailers. In the Delta outage scenario, modeling demonstrated Valley Water can continue limited service (at an assumed 20% demand reduction) for a 24-month period with no imported water supplies if it occurred in a normal hydrologic year and started with normal groundwater supplies. In a regional power outage, Valley Water can operate facilities on backup fuel storage for an estimated 3 to 10 days, or longer given regular external fuel deliveries.

The 2016 IRP recommends efficient and targeted opportunities to improve system reliability and performance by either shortening Valley Water system outage time following an event or strengthening retailer capability to withstand Valley Water system outages. Important concepts that were incorporated into the identification of project opportunities and the analysis methodology are:

1. *Incorporate recent operational knowledge*: Planned and unplanned maintenance outages of Valley Water pipelines and treatment plants have allowed retailers to learn how to operate their systems without Valley Water treated water supplies. Retailers have operated with Valley Water treated water supply interruptions for up to eight weeks in some cases.

2. *Account for backup supply redundancy*: Most retailer service areas have adequate groundwater pumping capacity to serve as a backup to treated water deliveries and may not require large investments in additional reliability.

3. *Consider raw water and treated water system interdependencies*: Strengthening Valley Water's treated water pipeline system alone may not dramatically improve reliability in scenarios where raw water pipelines fail. The opposite also applies, as strengthening Valley Water's raw water pipeline system alone may not dramatically improve reliability in cases where treated water pipelines fail. Strengthening key portions of both the raw and treated water pipeline systems is needed to provide improved reliability. These improvements are being planned and recommended through the development of a distribution system master plan.

4. *Leverage existing investments*: Where possible and beneficial, leveraging existing assets is preferred, as Valley Water, retailers, and SFPUC have made significant investments in increasing system reliability and operational flexibility since the 2005 IRP.

5. *Favor frequently used assets*: Assets, particularly groundwater wells, which can be used more frequently to enhance daily operations or periodic maintenance operations, are preferred over assets that would be designated as standby for infrequent use only during major emergencies.

6. *Address specific vulnerable areas*: There are specific retailer service areas that are more vulnerable to outages of Valley Water treated water or managed recharge. Focusing on localized solutions to improve reliability in these specific areas may be more effective, with lower costs, than major infrastructure improvements.

Ultimately, Valley Water and retailers determined that targeting specific vulnerable areas for improvement will effectively address identified reliability needs. A total of 20 projects are identified in the 2016 IRP to improve reliability in these specific areas. Some projects were identified for retailer implementation, some for Valley Water implementation, and others for joint implementation. Valley Water has been working to complete the identified projects since 2016.

Local Hazard Mitigation Plan

Valley Water's 2017 Local Hazard Mitigation Plan (2017 LHMP) identifies capabilities, resources, information, and strategies for building resilience and reducing physical and social vulnerabilities to disasters. It also coordinates mitigation actions, providing essential guidance for Valley Water to reduce its vulnerability to disasters. Valley Water developed the 2017 LHMP to be consistent with current legislation, conditions, and best available science. This ensures that hazards are accurately profiled;

policies are consistent with current Valley Water standards and relevant federal, state, or regional regulations; and Valley Water has an updated LHMP consistent with Federal Emergency Management Agency (FEMA) Emergency Response Plan (ERP) requirements. The 2017 LHMP also includes strategies to reduce vulnerability to disaster through education and outreach programs, foster the development of partnerships, and implement risk reduction activities.

Emergency Operations Center

Valley Water's Emergency Services and Security Unit (ESSU) coordinates emergency response and recovery for Valley Water. During any emergency, Valley Water continues the primary missions of providing clean, safe water and flood protection to the people of Santa Clara County. ESSU maintains a full-time professional emergency management staff trained and equipped to respond quickly to support Valley Water's Emergency Operations Center (EOC) and field responders. The ESSU ensures that critical services are maintained, and emergency response is centralized.

The EOC is connected to other agencies and jurisdictions by an array of telecommunications, two-way radio, satellite telephone, and wireless messaging systems. In addition, two response vehicles with many of the same communications capabilities of the EOC enable staff to establish mobile emergency command posts just about anywhere field operations may require. Office of Emergency Services (OES) maintains communications with local, state, and national emergency management organizations and allied disaster preparedness and response agencies.

Milpitas Intertie

During an emergency, in addition to retailers relying on groundwater and their own supplies, Valley Water has a 40-million gallon per day intertie with the SFPUC located in the City of Milpitas, which allows the SFPUC and the East Pipeline systems to exchange water during emergencies and planned maintenance.

4.4 Delta-Conveyed Supply Interruption

A strategy was developed by DWR, the Army Corps of Engineers (Corps), Bureau of Reclamation, California Office of Emergency Services (Cal OES), and the State Water Contractors to provide water supply protections that would enable resumption of at least partial deliveries from the Delta in less than six months in the event of an outage.

Valley Water analyzed the impacts of a six-month Delta outage to determine the effect on service. The analysis assumed that all local infrastructure remains intact, as an earthquake or flood in the Delta is unlikely to badly damage local infrastructure. The analysis also assumed normal hydrologic conditions and starting storage conditions, rather than stacking disaster upon disaster (i.e., earthquake plus drought, etc.), access to SFPUC supplies, and implementation of water use reductions of 20%. The impacts of such an outage are largely operational as retailers would be required to use groundwater instead of their usual treated water supplies and Valley Water would actively manage the groundwater recharge program to meet countywide needs. Even with increased pumping, groundwater storage is estimated to remain in the normal (Stage 1) range. Thus, the impacts of a six-month Delta outage are manageable assuming a normal starting position. Valley Water would potentially need to call for more aggressive water use reductions if a Delta outage were to occur during or immediately following a drought.

The Delta Flood Emergency Management Plan (DWR, 2018) provides strategies for responses to Delta levee failures, including earthquake-induced numerous levee failures during dry conditions with multiple flooded islands and extensive saltwater intrusion, resulting in curtailment of export operations. Under these severe conditions, an emergency freshwater pathway would be established from the central Delta along Middle River and Victoria Canal to the export pumps in the south Delta. The plan includes the pre-positioning of emergency construction materials at stockpile and warehouse sites in the Delta, and development of tactical modeling tools (DWR Emergency Response Tool) to predict levee repair logistics, timelines of levee repair, and suitable water quality to restore exports. Using pre-positioned materials, multiple earthquake-generated levee breaches and levee slumping along the freshwater pathway can be repaired in less than six months. Significant improvements to the central and south Delta levee systems along the emergency freshwater pathway began in 2010 and are continuing. Continued efforts under analysis strive to mitigate not only flood and earthquake risk but also meet future sea-level rise risk.

5. COMMUNICATION PROTOCOLS

When the Board calls for short-term water use reduction actions under the WSCP, the cities and water retailers consider implementation of their WSCP actions to achieve the necessary shortage response. Clear, consistent, and effective communication with the cities, retailers, and the public is essential to achieving desired results. Internally, Valley Water works with its Office of Government Relations to coordinate with external stakeholders.

Communication strategies include:

- Clear explanations to the public of the WSCP stages and triggers.
- Early and continuous coordination with retailers regarding response actions, use of groundwater versus treated water, and treated water quality concerns.
- Hosting drought summits with retailers and elected officials to develop coordinated response actions such as drought ordinances and enforcement of a day per week irrigation schedules.
- Providing a straightforward methodology for water use reporting by retailers.
- Allowing treated water contracts with retailers to be adjusted to avoid penalizing retailers for not taking contract amounts and support the use of groundwater and SFPUC for blending, if necessary.
- Working with the agricultural community on water conservation methods.

Valley Water provides communications to stakeholders with various frequencies depending on the WSCP stages. Valley Water's communication protocol are summarized in Table 6.

Table 6. Valley Water's Communication Protocol Under the WSCP Stages

Stage	Short-Term Water Use Reduction	Communication Strategies
Stage 1 **Normal**	None	• Ongoing public outreach aimed toward achieving long-term water conservation targets. • Quarterly meetings with retailers to discuss water supply issues.

Stage	Short-Term Water Use Reduction	Communication Strategies
		• Monthly Groundwater Conditions Report and Water Tracker posted on website. • Annual Assessment to Board.
Stage 2 Alert	0 – 10%	• All Stage 1 communications. • Coordinate potential ordinances with cities, County, and retailers to prepare for the potential of a worsening drought. • Additional public outreach to augment Stage 1 efforts, promote immediate behavioral changes, and set the tone for the onset of shortages. • Updates to the Board, Committees, and retailers on preparation for drought messaging.
Stage 3 Severe	10 – 20%	• All communications above. • Monthly coordination with cities, County, and retailers to discuss conditions and to enact and review the progress of ordinances and water use restrictions. • Extensive public outreach to specific user groups such as residential, businesses, large landscapers, and agriculture to support behavioral change of water users. • Work with the press to disseminate drought messages.
Stage 4 Critical	20 – 40%	• All communications above. • Outreach expanded further to support significant behavioral change of water users. • More frequent meetings with cities, County, and retailers to discuss conditions and update enforcement of ordinances and water use restrictions. • Workshops and summits with retailers, elected officials, and other water user groups. • Monthly updates to the Board on water supplies and demands. • Coordination with local, state, and federal emergency agencies.
Stage 5 Emergency	40 – 50%	• All communications above. • Activation of the Emergency Operations Center. • Weekly meetings with cities and retailers on shortage conditions and response. • Expanded coordination with local, state, and federal emergency agencies. • Weekly updates to the press and public on conditions.

6. COMPLIANCE AND ENFORCEMENT

In general, most water shortage compliance and enforcement actions occur at the retailer level and with city or County enforcement staff or law enforcement. Valley Water does not issue citations, fines, or surcharges to the public regarding water waste. Instead, Valley Water works with cities and retailers that have a direct relationship with water customers to develop ordinances and water use restrictions to prevent water waste and reduce demand during droughts.

7. LEGAL AUTHORITIES

This section describes Valley Water's Legal Authorities as required by Water Code § 10632(a)(7). Valley Water will coordinate with any city or the County to which it provides water supply services for the possible proclamation of a local emergency under California Government Code, California Emergency Services Act (Article 2, Section 8558).

7.1 Statutory Authority

Water Code Sections 350 and 375 et seq.

Sections 375 *et seq.* and 350 *et seq.* of the Water Code authorize Valley Water, a wholesale urban water supplier and special district, to, upon appropriate factual findings, implement a water conservation program and/or declare a water shortage emergency by resolution or ordinance and adopt and enforce related conservation measures. If appropriate, Valley Water can reduce the amount of treated water it supplies to local retailers and/or impose water reduction measures.

Santa Clara Valley Water District Act

One source of statutory authority that empowers Valley Water to implement or enforce water shortage response actions is its District Act (The Santa Clara Valley Water District Act, Chapter 1405 of Statutes 1951 of the State of California, Water Code Appendix, Chapter 60). Sections 4 and 5 of the District Act grant Valley Water power to conserve waters within its jurisdiction (as well as import and distribute water).

Specifically, section 4(c) of the District Act authorizes Valley Water to:

- provide for the conservation and management of floodwater, stormwater, or recycled water, or other water from any sources within or outside the watershed in which the district is located for beneficial and useful purposes.
- protect, save, store, recycle, distribute, transfer, exchange, manage, and conserve in any manner any of the waters.
- prevent the waste or diminution of the water supply in the district.
- retain, protect ... drainage, stormwater, floodwater, or treated wastewater, or other water from any sources, within or outside the watershed ....

(District Act, §4 [Objects and purposes], subd. (c)(3), (4), (5) & (6).)

District Act Section 5, paragraph 5, similarly provides that Valley Water may:

... store water in surface or underground reservoirs within or outside of the district ... conserve, reclaim, recycle, distribute, store, and manage water for present and future use within the district; [and]

appropriate and acquire water and water rights, and import water into the district and to conserve within or outside the district, water for any purpose useful to the district ....

Valley Water does, though, charge a groundwater extraction fee on reported extractions and requires all significant groundwater extraction facilities to be metered and extractions reported on either a monthly, semi-annual, or annual basis.

Statutory Groundwater Sustainability Agency Powers

In addition to the District Act and Water Code §§ 350 and 375 et seq., Valley Water is the designated Groundwater Sustainability Agency (GSA) for the Santa Clara and Llagas groundwater subbasins under the Sustainable Groundwater Management Act (SGMA) and has a DWR-approved Alternative to a Groundwater Sustainability Plan (GSP) in place for managing these subbasins. Although Valley Water does not currently restrict groundwater pumping or impose extraction allocations upon owners or operators of groundwater extraction facilities and is not planning to do so, it has the power to do this, if necessary (See Water Code § 10726.4(a)). In February 2018, the Board adopted Resolution 18-04, which describes the fundamental approach to respond to worsening basin conditions, including the steps that Valley Water would take in coordination with stakeholders prior to implementing SGMA authorities to regulate pumping.

7.2 Past Valley Water Resolutions

In response to past droughts, Valley Water's Board has passed resolutions calling for reductions in water use. Valley Water passed water conservation related resolutions in April 1988, March 1989, April 1990, March 1992, June 2007, March 2009, July 2010, September 2010, January 2014, February 2014, November 2014, March 2015, November 2015, and June 2016.

Resolutions prior to 2014 generally called for either "voluntary" or "mandatory" reductions in water use. Since 2014, Valley Water has generally avoided use of these words and instead passed resolutions with language identical to, or substantially similar to, the following:

> NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Santa Clara Valley Water District that a water use reduction target equal to [e.g., 20] percent of [e.g., 2013] water use is called for through _______________ [future date], and it is further recommended that retail water agencies, local municipalities and the County of Santa Clara implement mandatory measures as needed to achieve the [e.g., 20] percent water use reduction target.

Some Valley Water resolutions have also included language calling for "*a restriction on outdoor watering of ornamental landscapes or lawns with potable water to* [e.g., 4] *days a week through* _________ [future date]."

7.3 Contractual Authority

In addition to its statutory authority, Valley Water has contractual authority to reduce the amount of potable, treated water it provides to its retail customers.

Article C, Section 4(c) of Valley Water's standard-form treated water contract with its retailers provides that, if the Board passes a resolution providing for a reduction in water use by more than 10%, it shall reduce the amount of potable treated water it provides to retailers by this same amount, minus 10%. Thus, if the Board calls for a 30% reduction in water use during a drought, it will reduce treated water supplies to its retailers by 20% (a call for a 20% reduction would result in a 10% reduction in treated water supplies, etc.).

Additionally, under Valley Water's standard-form treated water contract, retailers may purchase "non-contract" water above their monthly purchase commitment when additional supplies are available. In the past, in conjunction with a resolution reducing contractual treated water supplies, while Valley Water has continued to allow retailers to purchase "non-contract" treated water, it has increased the price of such "non-contract" water to discourage overuse. Valley Water has the authority to eliminate non-contract water sales altogether if necessary. Although Valley Water's contractual authority relates only to treated water deliveries, not to groundwater extraction, the contracts give Valley Water the ability to adjust treated water pricing to incentivize the use of either treated water or groundwater by its water retailer customers, depending on what best supports local water supply needs and operations.

8. FINANCIAL CONSEQUENCES OF WSCP

Under a water shortage scenario, Valley Water expenses are anticipated to increase due to actions to augment water supply and encourage demand reduction. At the same time, revenue would decrease because of a reduction in water sales. Table 7 outlines financial consequences and anticipated mitigation actions for each shortage response action stage.

Table 7. Valley Water's Financial Consequences and Anticipated Mitigation Actions for Each WSCP Stage

Stage	Stage Title	Requested Short-Term Water Use Reduction	Financial Consequences	Anticipated Mitigation Actions
Stage 1	Normal	None	None	Funding provided for supplemental water supply reserve.
Stage 2	Alert	0 – 10%	Potential increase in operating and maintenance (O&M) expenses and mild to moderate reduction in revenue.	Identify supplemental funding options and reductions to O&M expenses.
Stage 3	Severe	10 – 20%	Moderate to significant increase to O&M expenses and decrease in revenue.	Stage 2 actions plus identify supplement(s) to water rate revenue (likely incremental rate adjustment) and deferral of capital expenditures; use of reserves if necessary.
Stage 4	Critical	20 – 40%	Significant increases to O&M expenses, including supplemental water purchases, and decreases in revenue.	Stage 3 plus short- and long-term O&M budget reductions.
Stage 5	Emergency	40 to 50%	Likely a greater degree of Stage 4.	Stage 4 plus operations limited to core business only.

During past droughts, increased expenses and reduced revenue put upward pressure on future water rates. Valley Water incurred significant costs from actions taken in response to the previous drought (2012 to 2016) and water charges were increased to cover those costs. To minimize rate impacts, Valley Water maintains supplemental funds in its financial reserves to help pay for increased expenditures to remedy shortages. The FY 2021 budget for the supplemental water supply reserve is $15.5M and is projected to grow to roughly $19.5M by FY 2031. The minimum for this reserve is 20% of the annual water purchase budget. The Board may adjust its adopted groundwater production charges midway through the fiscal year, which provides an opportunity to react to unanticipated changes in expenditures or revenue in a timely fashion. Following a drought and the use of the supplemental water supply reserve, funds need to be replenished in subsequent years through groundwater production and treated water charges.

9. MONITORING AND REPORTING

This section does not apply to wholesale agencies such as Valley Water.

10. WSCP REFINEMENT PROCEDURES

To ensure timely actions are taken per the WSCP during shortages, Valley Water increases its monitoring of its supplies and demands including:

- Groundwater subbasin and land subsidence conditions
- Reservoir storage
- Monthly and season-to-date rainfall at four rainfall stations within the County
- Monthly recycled water deliveries
- Monthly and year-to-date water use for each water retailer in the County
- Current retailer water use compared to a desired decrease in use

Not all water use data is available monthly and there is a time-lag from when water is used and reported. A small percentage of all water use, primarily private well owners, is unmetered and is estimated based on standard tables. Finally, Valley Water does not have access to individual water use account data for water users that purchase water from Valley Water's water retailers. Therefore, Valley Water cannot determine reductions by customer class or by customer unit (per household, for example). This data is only available to the direct retailers.

After a water shortage event is over, Valley Water will conduct an internal 'lessons learned' to determine if the WSCP performed as desired and identify changes to the WSCP if needed. Valley Water holds quarterly meetings with its retailers that allow an opportunity for any retailer to raise issues with the WSCP. In addition, Valley Water reviews its Monitoring and Assessment Program (MAP) report annually as part of its Water Supply Master Plan. The MAP allows the public to raise water supply planning concerns such as the WSCP. Any changes to the WSCP would be prepared by staff and brought to the Board for adoption and amendment to the WSCP.

This WSCP is an independent document separate from the UWMP and may be updated separately at any time. Amendments to this WSCP outside of the UWMP five-year update process will be brought to the Water Conservation and Demand Management Board Committee meetings for public review and comment and to the Board for a public hearing and approval. Valley Water will provide notice to its retailers, cities, and County, and publish this notice on its website, at the start of an amendment process to provide stakeholders an opportunity to participate. Notice will also be provided to retailers, cities, and County at least 30 days prior to a public hearing before the Board that includes the time and place of the hearing.

Amendments approved by the Board will be provided to retailers, cities, County, DWR, and the California State Library within 30 days of approval.

11. SPECIAL WATER FEATURE DISTINCTION

Since Valley Water is not a water retailer, it does not make distinctions for special water features such as pools, spas, and decorative water features.

12. PLAN ADOPTION, SUBMITTAL, AND AVAILABILITY

Valley Water's Board of Directors set the time and place for the WSCP public hearing for June 8, 2021 at an on-line meeting. Valley Water notified the water retailers and the cities and County of Santa Clara on May 17, 2021 of the time and date of the public hearing. The draft WSCP was posted on Valley Water's web site (https://www.valleywater.org/your-water/water-supply-planning/urban-water-management-plan) and made available for public review on May 17, 2021. The public hearing notice was published in ***San José Mercury News*** on May 18, 2021 and May 25, 2021 and ***Metro*** on May 19, 2021. Documentation of noticing of the public hearing is included in Appendix B.

Valley Water's Board held the public hearing on June 8 and June 9, 2021 and adopted the WSCP on June 9, 2021. The final WSCP will be posted on Valley Water's website within 30 days of adoption. Paper copies will be made available at the same time the WSCP is posted on the web site for public review during normal business hours.

Within 30 days of Board adoption and prior to July 1, 2021, the adopted WSCP will be submitted electronically to DWR via its Water Use Efficiency data online submittal portal (WUEdata). Electronic copies of the WSCP will also be provided to the cities and County within 30 days of adoption.

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Valley Water

Clean Water • Healthy Environment • Flood Protection

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